

MINUTES
OF
THE UTAH RADIATION CONTROL BOARD
March 4, 2005
Department of Environmental Quality (Bldg. #2)
Conference Room 101
168 North 1950 West
Salt Lake City, Utah 84114-4250

BOARD MEMBERS PRESENT

Karen S. Langley, M.S., Chair,
Stephen T. Nelson, Ph.D., Vice Chair,
Dane Finerfrock, Executive Secretary
Keith C. Barnes, J.D.
Kent J. Bradford, P.G.
Rod O. Julander, Ph.D.
Linda M. Kruse, M.S.
Joseph K. Miner, M.D.
Gregory G. Oman, D.D.S., B.S.
Robert S. Pattison, B.S.
Dan L. Perry, B.S.
John W. Thomson, M.D.

PUBLIC

Robert Baird, URS
Steve Cramer, Envirocare of Utah, LLC
Alan Grundvig, ATK Thiokol, Inc.
Terry Kenney, U.S. Geological Survey
Mervin Lyon, Fresenius Medical
James O'Rear, Public Member
Tye Rogers, Envirocare of Utah, LLC

BOARD MEMBERS ABSENT/EXCUSED

Dianne R. Nielson, Ph.D., Director of DEQ

**DRC STAFF/OTHER DEQ MEMBERS
PRESENT**

Craig Jones, DRC Staff
Loren B. Morton, DRC Staff
Fred Nelson, Attorney for DEQ
Ray Nelson, DRC Staff
Yoli Shropshire, DRC Staff

GREETINGS/MEETING CALLED TO ORDER

The Utah Radiation Control Board convened in DEQ Building #2, Room 101, 168 North 1950 West, and Salt Lake City, Utah. Karen S. Langley, Chair, called the meeting to order at 2:00 p.m. She welcomed the Board Members and the public. Karen Langley indicated that if the public wished to address any items on the agenda they should sign the public sign-in sheet. Those desiring to comment would be given an opportunity to address their concerns during the comment period.

I. APPROVAL OF MINUTES (Board Action Item)

a. Approval of January 7, 2005 Minutes

Karen S. Langley, Chair, asked the Board Members if they had any corrections to the minutes of January 7, 2005. Stephen T. Nelson, Vice Chair, proposed the following changes to the Minutes.

1. Page 6, Item V. a., second paragraph, which reads: “ Stephen T. Nelson, Vice Chair, asked: “Ron, can you or Loren tell me this: what is the saturated thickness **per aquifer?**” **Changed to read: “. . . of the aquifer?”**

Joseph K. Miner, M.D., proposed the following change to the Minutes:

2. Page 1, under subtitle “Board Members Present,” correction to his name from “**Joseph K. Minor, M.D.**” Change to read as: “**Joseph K. Miner, M.D.**”

MOTION MADE BY GREGORY G. OMAN TO APPROVE THE MINUTES OF JANUARY 7, 2005 SECONDED BY DAN L. PERRY.

MOTION CARRIED AND PASSED UNANIMOUSLY

II. RULES (Board Action Item)

a. R313-12, “General Provision;” R313-15, Standards for Protection Against Radiation”; R313-19, “Requirements of General Applicability to Licensing of Radioactive Material”; R313-22, “Specific Licenses”; and R313-32, “Medical Use of Radioactive Material” – G. Galloway

Gwyn Galloway, Health Physicist, addressed the Board regarding changes to several chapters of the Utah Administrative Code (chapters are listed above). In order for the Division to meet the compatibility requirements of the U.S. Nuclear Regulatory Commission (NRC), changes that have been made by the NRC to their regulations are also required of Utah to make to Utah’s Utah Radiation Control (URC) Rules.

Board members were also informed that the majority of the proposed rule changes were required to be identical or have essentially the same wording as the NRC regulations to meet these compatibility requirements; therefore, the majority of the proposed rules were either incorporated by reference or were copied directly from NRC regulations.

The first proposed rule-change discussed was based on NRC modifications to the definition of "shallow dose equivalent" and the manner in which "shallow dose equivalent" was determined.

Secondly, the NRC has revised 10 CFR 35 in its entirety. In order to meet compatibility requirements, the proposed rules will replace the present Rule 313-32 by incorporating 10 CFR 35 by reference. Gwyn requested the Board Members to refer to their supplemental packet under Rule 313-32, "Medical Use of Radioactive Material." Gwyn explained that training and experience requirements in 10 CFR 35 was under revision by the NRC, and the modifications would not be published and final until October 24, 2005. Consequently, to allow the Division adequate time to adopt the NRC's "forthcoming modifications," DRC's staff requested the proposed rules found in R313-32-2 (a) and (b) be amended to modify the dates from "2005" to "2006."

The proposed rule changes also include the requirement found in 10 CFR 30.34(g). It requires non-medical use facilities to ensure that Mo-99 concentrations contained in patient doses that are produced and distributed to medical facilities are at an acceptable level. In addition, references to citations in Title 19, Chapter 3 and Title 63 of the Utah Code were corrected to reflect changes with numbering within both Titles. There is also a proposed modification to incorporate inspector-guidance information. It was prepared by the Attorney General's Office for the Utah Radiation Control (URC) Rules.

Board Members briefly discussed the potential impact of the proposed rules on medical facilities. Gwyn indicated that many of the prescriptive requirements were being removed which allowed medical flexibility in methods used to achieve compliance. 10 CFR 35 also put into regulations previous items that had been required through license conditions. Gwyn indicated that most medical facilities were aware that regulations were changing. The NRC adopted the present 10 CFR 35 requirements approximately two and one-half years ago, and the Agreement States are required to meet compatibility requirements for the 10 CFR 35 regulations within three years of the NRC effective date. Gwyn restated that the majority of the proposed changes were required to be adopted with the same or "essentially the same" language as the Federal regulations. In addition, the proposed rule changes were not "more restrictive" than the Federal requirements.

RECOMMENDATION:

DRC Staff requested the Board make one vote for the proposed changes to all affected chapters of the URC Rules. Staff also requested that the proposed rules, including the date modifications stated in the supplemental packet, be approved to go forward for a 30-day public comment period.

MOTION MADE BY STEPHEN T. NELSON TO APPROVE THE PROPOSED CHANGES AND MODIFICATIONS TO RULES R313-12, R313-15, R313-19, R313-22, R313-32, AND TO INCLUDE THE ADDITIONAL SUPPLEMENTAL CHANGE REQUESTED TO R313-32, AND THAT THESE RULES GO FORWARD FOR A 30-DAY PUBLIC COMMENT PERIOD, SECONDED BY JOSEPH K. MINER.

MOTION CARRIED AND PASSED UNANIMOUSLY

III. RADIOACTIVE MATERIALS LICENSING/INSPECTION
No Items

IV. X-RAY REGISTRATION/INSPECTION

a. Approval – Mammography Imaging Medical Physicists – Craig Jones

Craig Jones, Manager, informed Board Members about two requests from two individuals who are seeking authorization from the Board to serve as a mammography imaging medical physicists. The individuals have been approved by the Board to perform radiation, physics services at facilities that perform mammography. Craig reported that Floyd H. Tuley, Jr., Ph.D. and Ross L. Mercer, M.S. submitted the applications, and the applications were reviewed by a DRC staff member. He also reported that both individuals supplied documentation that showed they met the requirements of the radiation control rules.

RECOMMENDATION:

It is the recommendation of the Executive Secretary that the Board approve the certification of Floyd H. Tuley, Jr., Ph.D. and Ross L. Mercer, M.S. as Mammography Imaging Medical Physicists. The effective date of the approval should be from March 4, 2005 to May 31, 2006.

MOTION MADE BY KENT J. BRADFORD TO APPROVE THE CERTIFICATION OF FLOYD H. TULEY, JR., PH.D. AND ROSS

L. MERCER, M.S. AS MAMMOGRAPHY-IMAGING, MEDICAL PHYSICISTS, SECONDED BY GREGORY G. OMAN.

MOTION CARRIED AND PASSED UNANIMOUSLY

b. Request for Exemption to R313-16-296 – Craig Jones

Craig Jones, Manager, informed the Board Members that Mr. Neil A. Keller had submitted a request for the Radiation Control Board to exempt him from the requirements of R313-16-296. This rule requires inspection of all the radiographic equipment in two facilities in the State of Utah every year. Completion of this requirement is part of the requirements for renewal of the Qualified Expert (QE) designation. Craig noted that a copy of Mr. Keller's request was in the Board information packet.

Craig explained that a QE is an independent expert or consultant, authorized to inspect x-ray facilities. The Division of Radiation Control accepts the inspection work of a QE, as if a State employee had completed the work. Mr. Jones then summarized the statutory authority and the administrative rules that pertain to the qualification and certification of QEs. He also presented information about the stakeholders involved in the process that led to the statute and the administrative rules.

Next, Craig Jones discussed the specific circumstances regarding Mr. Keller, a resident of Ann Arbor, Michigan. Craig said that Mr. Keller's registration period as a QE began February 18, 2002, and it was effective through January 31, 2005. He noted that Mr. Keller had applied to renew his QE registration certificate, but he had only satisfied one of two renewal requirements. The first requirement involves the submission of an application. The second requirement instructs applicants to document performing a minimum of two inspections in Utah under Utah rule each year the applicant's "previous registration certificate" was in effect.

Craig said that Mr. Keller should have completed two inspections in Utah in years 2002, 2003, and 2004; for a minimum six inspections completed in Utah. He explained that Mr. Keller seeks an exemption from the requirement to conduct two inspections each year in the State of Utah, and the basis for his request is his inspection experience in another jurisdiction, most predominantly in Michigan.

Craig gave a number of reasons why the rule requires two inspections to be completed in the State of Utah each year that a person is named as a Qualified Expert. He ended his presentation by offering the recommendation of the Executive Secretary.

RECOMMENDATION:

It is the recommendation of the Executive Secretary for the Board not to approve Mr. Keller's request for an exemption from the Utah Radiation Control Rules.

Dane L. Finerfrock explained to the Board Members that if there is a rule that is inadequate, inappropriate or unnecessary then the Board should go through the rulemaking process to eliminate the rule. He also said that exemptions to a rule should be a "rare event." If the rule is valid, it should be applied to everyone, unless there are compelling reasons for it not being applied to everyone.

Discussion followed:

The Board Members discussed the reasons why Mr. Keller did not meet the requirements of R313-16-296 to be recertified. The rule said that two inspections every year are required, and Mr. Keller had not met the requirement. The Board Members felt, unless there was a rule change, the Board could not vote on Mr. Keller's "exemption request."

Dane L. Finerfrock asked the Board that if they granted the exemption, if the Board intended the exemption to be universally applied? Dane asked if the Board was instructing the DRC to change the rule?

MOTION MADE BY ROD O. JULANDER FOR THE BOARD TO DENY MR. NEIL A. KELLER'S "EXEMPTION REQUEST," AND ALSO FOR THE PROCESS OF RECERTIFICATION TO BE REEXAMINED, SECONDED BY GREGORY G. OMAN.

Discussion On This Motion Followed:

Stephen T. Nelson, Vice Chair, said that he would like to see information sent to Mr. Keller and brought back before the Board as to how this issue will be resolved in the future. He asked if this were to happen again to another Qualified Expert, what would be the appropriate steps to take to get their license reinstated in the State of Utah?

The Board discussed actions that may be taken. Craig responded that if the Board approves this motion then he would come back and give information to the Board as to how this rule can be rewritten in order to address the circumstances of someone who seeks to be re-approved for another interval to work in Utah.

Karen S. Langley, Chair, asked for a clarification to the current motion. She said that "part one" of the motion was that the Board declined Mr. Keller's request for an exemption, and secondly, for the Division to review

the recertification program and R313-16-296. She asked the Division to review the rules for the recertification program and for the Division to present changes at the next Board meeting.

DAN L. PERRY MADE A MOTION TO AMEND THE “MOTION MADE BY ROD O. JULANDER.” MR. PERRY ASKED THAT THERE BE A REVIEW OF RULE 313-16-296 AND FOR THE RULE TO BE PRESENTED AT THE NEXT SCHEDULED BOARD MEETING, SECONDED BY ROD O. JULANDER.

KAREN S. LANGLEY, CHAIR, ASKED FOR A VOTE ON THE AMENDMENT TO THE MOTION.

MOTION CARRIED AND PASSED UNANIMOUSLY

KAREN S. LANGLEY, CHAIR, ASKED FOR A VOTE ON THE AMENDED MOTION, AS FOLLOWS:

MOTION MADE BY ROD O. JULANDER TO DENY THE REQUEST BY MR. NEIL A. KELLER FOR AN EXEMPTION TO THE REQUIREMENT OF CONDUCTING TWO INSPECTIONS IN THE STATE OF UTAH IN ORDER TO BE RECERTIFIED IN UTAH AS REQUIRED BY RULE 313-16-296, AND ALSO IT IS REQUESTED THAT THE PROCESS OF RECERTIFICATION BE REEXAMINED BY THE BOARD, SECONDED BY GREGORY G. OMAN.

MOTION CARRIED AND PASSED UNANIMOUSLY

Additional Comments by Fred Nelson, Attorney for DEQ:

Fred Nelson, Attorney, advised the Board to use caution when considering changes to the rule for legal reasons. He noted it would be appropriate for the Board to look at factors that involve experience with Utah Rules; however, to develop a rule that protects local inspectors versus out-of-state inspectors “gets you into legal issues.” He said it was not worth “going that direction.” He recommended that the Board take “possible legal-consequences” into consideration.

V. RADIOACTIVE WASTE DISPOSAL (Board Information item)

a. Envirocare of Utah Ownership and Introduction - Dane L. Finerfrock

Dane L. Finerfrock, Executive Secretary, introduced Mr. Steve Creamer, the new owner of Envirocare of Utah. Dane invited Mr. Creamer to

“come forward and introduce himself,” and to make a few comments on behalf of his company to the Board and to the Public.

Mr. Steve Creamer, President of Envirocare, said the owner’s were excited about their new company. He said they were “moving forward,” even with the ban on B and C waste, and they felt it was the proper decision for Envirocare to make. As of last Friday, February 25, 2005, Governor Huntsman signed Envirocare’s license. Mr. Creamer said he appreciated the numerous meetings he had with DRC Staff: Loren Morton, John Hultquist, and Dane L. Finerfrock.

Mr. Creamer said Envirocare was “working hard” to make some capitol improvements at Clive. He said the DRC had a great staff, and he appreciated the way the DRC Staff had worked with him in making the improvements happen. He said he looked forward to working with the DRC in the future.

A Board Member asked Mr. Creamer if the Legislature’s decision to deny the approval of B and C waste in the State of Utah had effected his decision? Mr. Creamer responded that it had not, since Envirocare’s license was for a solid-waste facility, rather than for a radioactive-waste facility.

VI. URANIUM MILL TAILINGS UPDATE (Board Information item)

a. Moab Tailings DEIS Update – Loren Morton

Loren Morton updated the Board on the DOE Draft Environmental Impact Statement (DEIS) for the Moab Tailings Project in Moab, Utah. The following is the presentation he made before the Board:

**DEQ Comments on
DOE Draft Environmental Impact Statement for the
Moab Tailings Project, Moab Utah**
(Details at: <http://www.deq.utah.gov/issues/Moab/index.htm>)
River Migration – 2/05 USGS Model

1. Q₁₀₀ Flood Events
 - Water velocity / shear force – at all points along the river’s reach in Moab Valley can transport medium sized gravel (1.45 – 2.91 inch).
 - Site Sediments – riverbank and pile foundation built on silts and sands.
2. Q₅₀₀ and Q_{pmf} Flows– water velocity / shear force and erosion potential is higher

3. West Portal Scouring – will exacerbate water velocity, shear force and erosive potential

Ground / Surface Water Protection

1. Jurisdiction – disagreement with DOE
 - Clean Water Act (navigable waters)
 - State Groundwater Protection Regulations (Class 1C aquifer – to protect surface water and wildlife habitat)
2. Groundwater Cleanup Goal for Ammonia [NH₃(N)]
 - DOE: Acute Standard - 3.0 mg/l [based on 1 hr exposure]
 - State: Chronic Standard -[0.6 mg/l [based on 4 day Exposure]
 - Backwater Areas:
 - Lack of Turbulence – no open channel flow (laminar)
 - UPDES Mixing Zones Requirements - mixing zone dimensions (UAC R317-2-5), based on:
 - Avoidance behavior – max. width of mixing zone < 50% of channel width
 - Pollution Control – max. length ≤ 15 minutes of river channel travel time
 - Exposure Time
3. DOE Groundwater Transport Model
 - Groundwater to Surface Water Dilution Factor
 - DOE: Assumed 10-fold dilution
 - State: DOE data evaluation flawed – no consideration of:
 - Time Dependence
 - River stage / groundwater flow directions to discriminate data
 - Gaining Stream: Case to analyze
 - Losing Stream: This data will falsely inflate groundwater “dilution”

- DOE's Dilution Factor Average: 73.65 (simple)
 - Standard Deviation: 195.91 (same data, omitted from SOWP)
 - State: More study needed to determine factor
- On-Site Option: Groundwater Cleanup Time Required (see figure below)
 - DOE Model: 80 years (Acute standard)
 - 200 + years (Chronic standard)

*Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah
Draft Environmental Impact Statement*

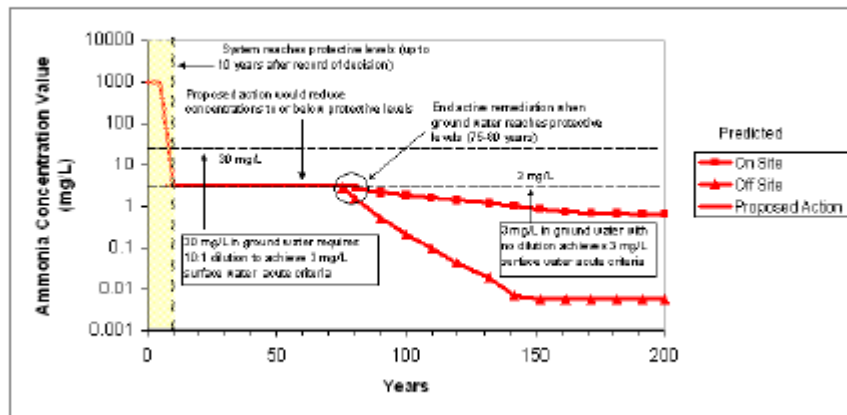


Figure 2-43. Predicted Maximum Ammonia Concentrations in Ground Water for Active Remediation

4. Effect of Ammonia Salts on DOE Transport Model (unanalyzed condition)
 - Upper reaches of tailings pile (historic evaporation / Atlas pump back well operations)
 - DOE $\text{NH}_3(\text{N})$ Source Term Modeled: 1,100 mg/l $\text{NH}_3(\text{N})$ [assumed constant]
 - Ammonia Pulse Leaching – DOE Estimates:
 - Source Term Concentration: 18,000 mg/l $\text{NH}_3(\text{N})$ [16-fold increase]
 - Arrival time @ water table under pile: 1,100 years
 - Duration: 440 years
 - DOE Model – Limited to a 200 year simulation
5. Groundwater Remediation Costs – for On-site Option
 - 200 Years of Groundwater Treatment (What If)
 - 120 extra years (DOE assumed 80)
 - Cost: 120 years x \$900K/yr = \$108 M extra

- Possible Cost Escalation of on Site Option:
 - DOE Estimate: \$248 M → \$356.8 M
- Compare with Off-site Options
 - Klondike Flats (Truck): DOE = \$407.2 M = only 14% more
 - Crescent Junction (Truck): DOE = 410.8 M = only 15% more
- Small Incremental Cost for Off-site Options = cheap insurance policy for public (river migration, future pollution control, etc).

Other DEQ Comments:

1. Attachment 1: 2/11/05 USGS River Modeling Report
 2. Attachment 2: 12/11/03 University of Utah Groundwater Hydrology Report
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Other State Agency Comments:

1. February 9, 2005 Utah Resource Development Coordinating Committee
 - Division of Forestry, Fire, and State Lands (1 p.)
 - Division of Wildlife Resources (4 pp.)
-

Loren said the DRC recognized the Department of Energy (DOE) had missed an opportunity to improve the technical evaluation of the project; consequently, that is why DEQ hired Terry Kenney, from the U.S. Geological Survey. Loren said the project was paid for by State of Utah, DEQ funds, U.S. Environmental Protection Agency (EPA) grant funds, and matching dollars from the U.S. Geological Survey. Loren said the project was a “three-way partnership.”

b. Report: Colorado River Migration Modeling Near Moab – Terry Kenny

Loren asked Terry Kenney, of the U.S. Geological Survey, to come forward and “report to the Board” on the results of the Colorado River Migration Modeling Project, which the U.S. Geological Survey completed.

Terry Kenney said the Project assessed the potential hazards of uranium tailings, if flooding occurred in the Colorado River. He said the Project started in early November of 2004. There were many types of scientific questions that were asked. He said they tried to figure out what type of hydraulic characteristics would be associated with Colorado River flooding-events of magnitude that can be expected in a 100-year, 500-year, 1,000-year timeframe? The second question was, how would these characteristics be distributed in the study-area, if a flooding-event reached Moab Valley, particularly near the uranium mill tailings?

To see the presentation that Terry Kenney, from the U.S. Geological Survey, made to the Board go to the web page below:

<http://www.deq.utah.gov/issues/Moab/index.htm>

See attached copy.

VII. OTHER DIVISION ISSUES (Board Information item)

a. Public Notice: Fresenius Medical Care, Ogden Utah – Craig Jones

Craig Jones informed the Board that on February 16, 2005, a public notice appeared in the Ogden Standard Examiner. The notice opened a 30-day public comment period regarding a preliminary-decision by the Executive Secretary of the Utah Radiation Control Board. He said the preliminary-decision related to an application from Fresenius Medical Care of Ogden, Utah for registration of radiation generating machines.

Craig told the Board that Fresenius Medical Care manufactures a filter that is used in kidney dialysis. The filter needs to be sterilized before use and the company wants to sterilize the filter products on-site. The method of sterilization they want use involves radiation from two linear accelerators. Craig said the facility had submitted an application to the Division about their design, equipment, and radiation safety program. He also said the information meets the Division's regulatory requirements.

In addition, if comments were submitted to the Executive Secretary, they would be reviewed, and a response would be prepared and distributed, as needed. He also said that it was the Executive Secretary's intention to issue a registration certificate. The issuance of a registration certificate will allow the company to move forward with facility construction plans.

IX. OTHER ISSUES

Next Board Meeting – April 1, 2005, DEQ Bldg #2, 168 North 1950 West, Conference Room 101, Salt Lake City, Utah, 2:00 – 4:00 P.M.

THE BOARD MEETING ADJOURNED AT 3:50 P.M.